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THE FINE AND INDUSTRIAL ARTS IN ELEMENTARY SCHOOLS, GRADES IV AND V

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The previous article in this series stated that one distinguishing characteristic of the beginnings of manual expression is satisfaction in occupation, almost regardless of the product. Later appears an interest in the quality of the product and a desire that it be a somewhat adequate expression of an idea. This interest gives value to the sort of intensive work suggested for Grades II and III, where in addition to the free drawing and constructive work used as a means of describing ideas of current interest, a few things were to be selected and studied somewhat thoroughly in a series of lessons, each one of which presented or emphasized some particular aspect or detail of the object or process of construction. In these careful records of observations drawing ceases to be merely the making of symbols that can be recognized when used as illustrations of a story, and becomes a sincere effort to interpret truly a particular object. For example, if the drawing is of a Norse boat, the children forget for a time the historical associations in the attempt to represent that special form of boat correctly. A new interest enters in: that of trying to make the particular thing in view exist again on paper. The drawing has a content of its own. When after such drawing the children turn again to illustration of history requiring the Norse boat, they do so with increased power of expression. The results of intensive study of this sort should be a relatively thorough knowledge of a few objects, geometric relations, and processes, with a corresponding confidence in the use of them, and the satisfaction that arises from having mastered certain definite things, and from a realization that well-directed, persistent effort is likely to bring desired results.

In constructive work the teacher of manual expression has early to decide between a policy that leans toward giving children the freedom of all tools and materials at as early an age as these can be handled with safety—for example, bench tools for wood-working in primary grades—or toward utilizing somewhat completely the possibilities of simpler materials and implements, regarding these as adequate to that stage of expression and a fitting introduction to more difficult undertakings. Where the second policy is adopted and interpreted freely, the pleasure of thorough accomplishment usually makes the need of stimulation by novelty less urgent. The incitement of new tools and materials can be reserved till appropriate times. Thus may be avoided the necessity for continually checking the development of the ability to enjoy exploring the possibilities of a few things, and for interfering with the habit of undertaking whatever task is at hand with courage and good will.

The mastery of one implement and process after another may be so guided as to aid rather than hinder originality, and is ultimately necessary to freedom of expression. Such mastery develops those worthy accompaniments of free expression, namely appreciation of technical skill and constructive honesty, ability to think constructively, to plan processes intelligently, and to experience the satisfaction of contributing a piece of work that is well done.

In the desire to develop originating power and not simply technical excellence, we should not lose sight of the importance of developing also the inclination and skill to carry projects to completion and not simply to originate them.

Manual expression should awaken pleasure in the sort of work which requires sustained effort. This should not be confused with the pleasure in spontaneous play. Every man should find pleasure in his work and in his play, but no sane man continues play after it has become irksome, and no man of character drops his work whenever it is irksome. The interest arising from the projection or presentation of new things is easily awakened. The interest which is developed by carrying a project through to completion after the first burst of enthusiasm has passed is of a much slower growth but is more trustworthy, and if systematically strengthened, becomes a motive which can be relied upon.

We turn with aversion from the sight of a school where children are trained simply in mechanical processes. They are making with their hands things which their desires had no part in suggesting nor their heads in planning. But the other extreme, that of a group of earnest, highly trained teachers compelled to spend their best strength trying to make any serious work seem worth while to classes of blasé upper-grade or high-school children who have "had it all before," and who regard these efforts with mild contempt, is a phenomenon that occurs with sufficient frequency to merit consideration.

Such children have been deprived of the sort of work-interest which is necessary to save work from becoming commonplace. A man is unfortunate who has never been trained to suggest and direct his own work, but on the other hand, a large part of one's work will inevitably consist in dealing with matters one never suggested nor desired. One is also unfortunate who has never developed a habit of dealing with such matters cheerfully and effectively simply because they are there and must be done.

The following suggestions for work in representation, construction, and design emphasize the points in technical development which the abilities of the children seem to indicate as particularly appropriate to these grades, and which are factors necessary to freedom of expression.

Representation.—Grades IV and V present an important problem to the instructor in drawing. In many exhibitions of drawing one is impressed by the spontaneity and vigor of graphic expression during the first three grades, and by the failure in the upper grades of any adequate fulfilment of the promise given in the lower. If, seeking a reason for this, we visit schools and watch children at work, we usually find, as was suggested in the last article, that during the second year in school, and more especially during the third, there is added to interest in the mere activity of drawing an interest also in the quality of the product and a desire that it represent the object more adequately. This suggests that failure to make reasonable progress after the third or fourth year is due either to continuation of general drawing without emphasis of particular phases appropriate to the needs of these grades, or to a too abrupt change into adult methods. The intensive study of a few objects, to each of which a succession of lessons is devoted, was suggested for Grades II and III, to meet this changed attitude of the children toward their work and to make certain that ability to draw should keep pace with appreciation of representation.

At some time near the fourth year in school most children appear to lose interest in making crude sketches. They become conscious of and are in danger of being discouraged by their lack of skill. The sort of direction given to their observation and expression determines largely the development of ability during the remainder of the school course.

The method most commonly followed at this time is to introduce the study of the principles of perspective, especially those relating to foreshortened circles and to rectangles at different levels above and below the eye. While the knowledge of these principles is necessary to correct delineation, the application of them to actual objects is a complicated process, and anything more than an incidental reference to them requires greater expenditure of time and effort than is justified in these grades. The children are so fully occupied with direct comparison of object with drawing in the attempt to make the representation "look right" to the eye that they can seldom be led to refer for intellectual confirmation, to a principle which defines how the thing should appear under the given conditions. The immediate impression resulting from comparing the visual image of the object with that of the drawing to see if they fit is the important factor. The questions, "Does it look like that object?" and "How can you make it look like that?" are usually more effective at this age than explanations of the technical grammar of graphic expression. If the child's own observation will not carry him far enough, sketches made for him, which satisfy his eye, will usually interpret the facts of appearance sufficiently to enable him to express the problem in hand.

It seems wiser, therefore, during the fourth and fifth years in school to treat perspective effects incidentally, and postpone, if possible, problems involving definite study of them. This gives time for necessary practice with things easily understood, instead of requiring children to learn advanced principles without experience sufficient to make them practical working schemes.

The latter method often results in an accumulation of formulae for representing perspective appearances, rather than a trustworthy working knowledge. It is a difficult task to induce a child in these grades to draw a book correctly in perspective. When it is successfully done it is usually an indication that he has followed his instructions, rather than that he has seen the thing as he has represented it.

An important matter, and one which appeals strongly to children at this age, is that of correct proportions as a necessary element in truthful and satisfying representation. They readily discern whether a drawing is "too tall" or "too short" as compared with the object, and they develop ability to estimate relative lengths of parts with some degree of precision.

For example, in such a drawing of a toy boat as Fig. 1, a child will take great interest in representing the hull of the boat in its proper proportions, and in adding the keel so that its size bears the right relation to the hull. He can easily be led to proceed with much care, showing just where the mast should be placed and how tall it should be to be like the model. In a similar way he may be led to find much satisfaction in estimating the slant and length of each line with considerable accuracy. Constructed objects such as toys offer excellent opportunity for drill in the matter of correct proportions. Some such drill in correct drawing is necessary to mastery of this means of expression. Without it drawing may easily become a promoter of careless habits, and the interest in doing a thing well may remain unawakened.

A common method of obtaining correct proportions is to hold the pencil at arm's length and use it as a measure. Aside from the fact that it is practically impossible to teach young children to use this method with any trustworthy results, the assistance obtained by such measurements, even when they are skilfully taken, is of extremely doubtful value for children. Progress in ability to draw correctly depends largely upon the power to compare visual images and discern their likenesses and differences. Pencil measurements substitute a mathematical computation for a visual perception.

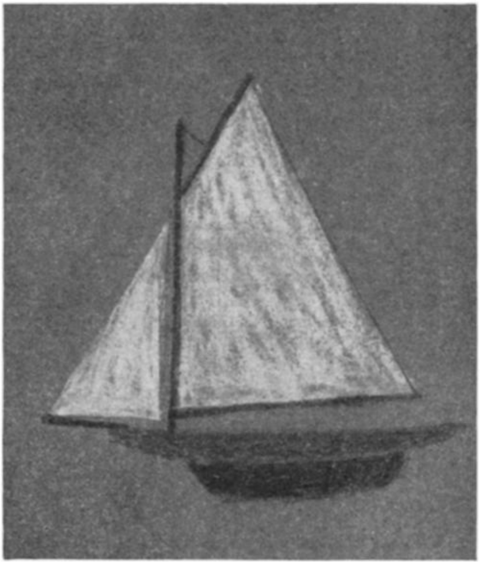

FIG. 1

For example, in Fig. 2 the pupil can measure and ascertain that the width of the tumbler at the top is two-thirds of the height of the image, and with this information can plan his drawing correctly. On the other hand, if he will indicate the top and bottom of his tumbler by lines of indeterminate length and place two splints to represent the sides, moving them till the included shape satisfies his eye, he will discover that he can thus determine the proportions with great accuracy. If one looks at *a,* which is the shape to be represented, and then at *b,* he sees immediately that *b* is too narrow, while the image of *a* fits that of *c*, and the similarity of proportions satisfies the eye. The source of this satisfaction is not due to any confirmation from a mathematical estimation of width and height but to an immediate sense of correspondence of images. This sense develops rapidly with exercise. In Grades IV and V much should be done toward training the eye to swift and unerring discrimination. Unless this is done drawing will be as halting and uncertain as are mathematical processes when the worker is not sure of the multiplication table.

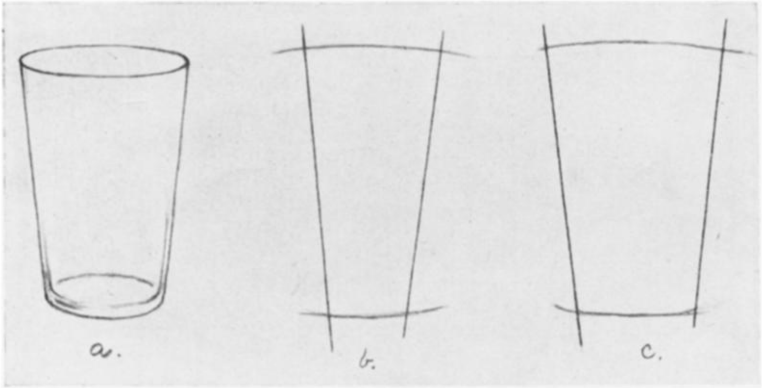

FIG. 2

Pencil measurements might be recommended as a final verification, except for the fact that they are seldom so trustworthy, even when carefully taken, as the visual perception which has received an amount of training equal to that required for the mere process of learning to take pencil measurements.

The representation of objects by splints gives excellent practice in judging proportions. There are no lines to be erased. Such representation is a helpful introduction to drawing the object with pencil.

The sort of observation which leads to most perceptible progress often may be stimulated by having pupils exchange seats and talk over the drawings made by other children, indicating by sketches or otherwise how they think improvements may be made.

To avoid mechanical slowness there should be alternation of lessons in making rapid sketches which express as much as

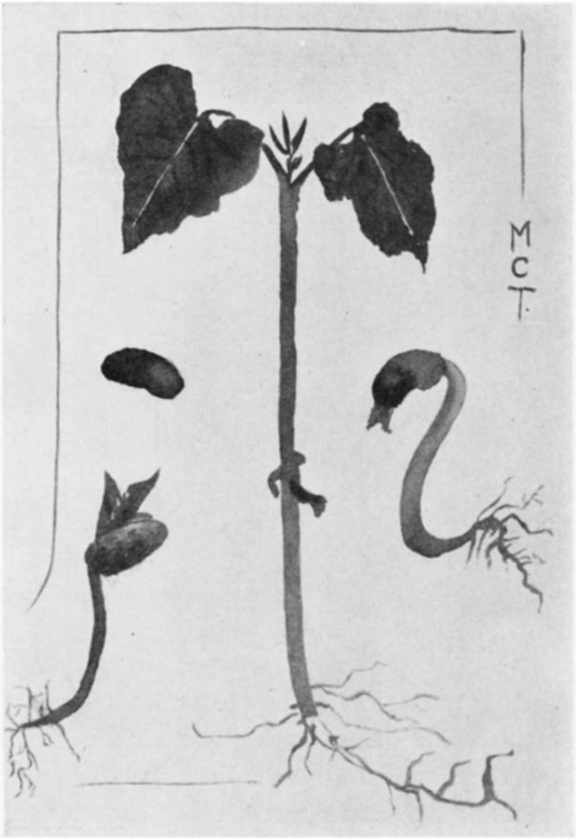

FIG. 3

possible by a few lines or brush strokes, with other lessons where a single drawing is carried to completion by being worked over and made as correct as possible.

Nature drawings in water color or brush and ink call for careful representation of proportions and shapes as well as beauty of form and character of growth (Fig. 3). As an accompaniment of drawing, modeling is an exceedingly valuable means of leading children to appreciate characteristics of objects and to think of them as occupying three dimensions.

Construction.—Skill to handle new implements and more refractory materials, a greater satisfaction in good workmanship, and ability and willingness to undertake more careful preparation in the way of plans and patterns before cutting into the material for final construction, are noticeable in children in these grades as compared with those in Grades II and III. Problems will vary with the conditions of different localities. Some instructors prefer to use constructive work as a center for other subjects. Others plan a course to develop appreciation of industries and occupations, and still others choose as a basis for problems, the immediate needs and interests of school and home. Whichever line is emphasized, much of what is valuable in the rest may be included, and in any case opportunity will be offered for experimentation with plans and designs and for increased mastery of tools and materials.

The following recommendations are based on the line of work which finds its suggestions chiefly in the needs and interests of the particular school and home environment. Children are usually ready to propose an abundance of practical projects.

Many objects useful and interesting to the children may be made from tough paper and later from cardboard. This material can be shaped by folding, cutting, and pasting so easily that it stimulates invention and is especially adapted for objects which are to be planned by means of patterns. Continued use of the rule with the addition of compasses and 45°-triangles and more complete control of scissors give children the mechanical means for planning and completing objects.

Envelopes for street-car tickets, Christmas cards, invitations, clippings, etc., call for careful patterns and measurements so that the envelope may be of the required size. Picture mounts, portfolios, sketchbook and lesson covers, and boxes of various kinds are among the suitable objects.

The sort of working-drawing required in making patterns for these, acquaints children early with this means of predetermining the shape material shall take, and is the best sort of preparation for later making drawings which represent three dimensions. Some of the patterns involve drawing to scale and translating two dimensions into three.

With vellum, lining papers, tape, paste, sewing-linen, and a punch, the cardboard work may be extended to include interesting and simple forms of book-binding, for example, notebooks, pocket memorandum pads, needle cases, book covers, portfolios, clipping files, etc. (Fig. 4).

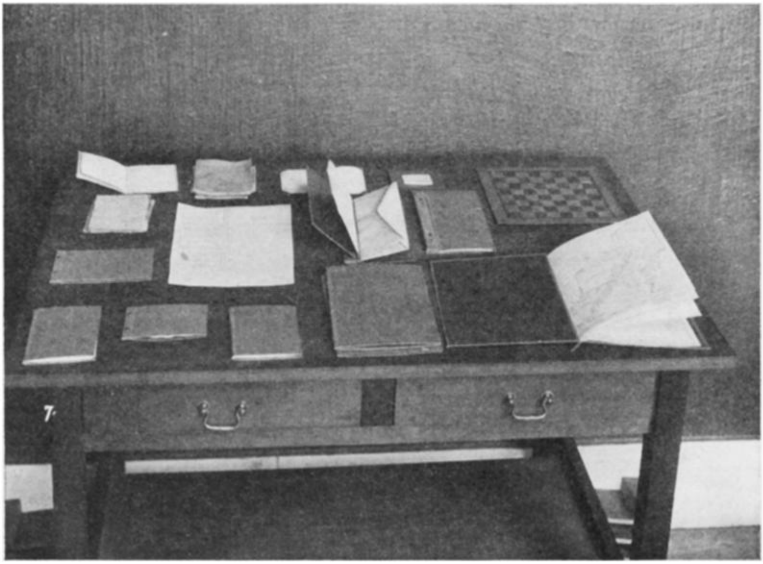

FIG. 4

Weaving is an occupation of universal interest. It develops some acquaintance with textiles and processes and calls for knowledge of design and color. The looms for small articles may be of the simplest construction, such as can be made by the pupils themselves. Clay work in tiles and simple pottery shapes is another valuable medium of expression of form in definite terms, and together with weaving furnishes a means of developing concrete interest in some industries of the present and past. Some of the domestic activities of sewing and cooking should form an important part of the work of these grades, especially of Grade V.

Simple forms of woodwork which can be done mostly with the knife are well adapted to these grades and give some familiarity with the material which is useful as an introduction to bench work in upper grades. For most of this work, thin wood which can easily be prepared in the rough and does not require bench tools, is sufficient.

Among the projects most frequently suggested by the children are pencil sharpeners, pen and pencil boxes, paper cutters, brush and water-cup holders, string and fishing-line winders, windmills, weather vanes, waterwheels, games, models for bridges, derricks, etc., toy carts, sleds, boats of various kinds, kites, flying machines, tops, pin-hole cameras, toy houses and furnishings, bird houses, etc.

Design.—The two places of design before described, that of practice in repeating units at consistently related intervals, and that of planning and decorating objects, should continue.

In addition to borders previously suggested, pupils should repeat units over surfaces, spacing the distribution by the eye unaided by mechanical measurements (Fig. 5).

The spacing of printing on covers for school work, the planning of margins, titles, etc., on school papers, so that language, spelling, and arithmetic papers may present a good appearance, and the simple decoration of constructed forms, furnish appropriate problems. When an object is to be decorated it is usually best at this age to limit and define the problem. For example, if a folder or box cover is to be ornamented the element of decoration may be limited to a plain band border. The pupils then experiment with different widths of margins and of border lines, to determine the spacing which produces the most pleasing effect. Another example may be the careful spacing of one element on a given surface, such as a title to be printed upon a cover.

In all these problems the results depend for their effect upon well-related spaces. The cover titles are printed in plain letters carefully planned so that the letters will appear neither crowded nor scattered, and so that the completed title shall exactly fill the area previously determined for it on the page. By thus limiting the elements which children are allowed to use attention is concentrated upon an attempt to make the best possible

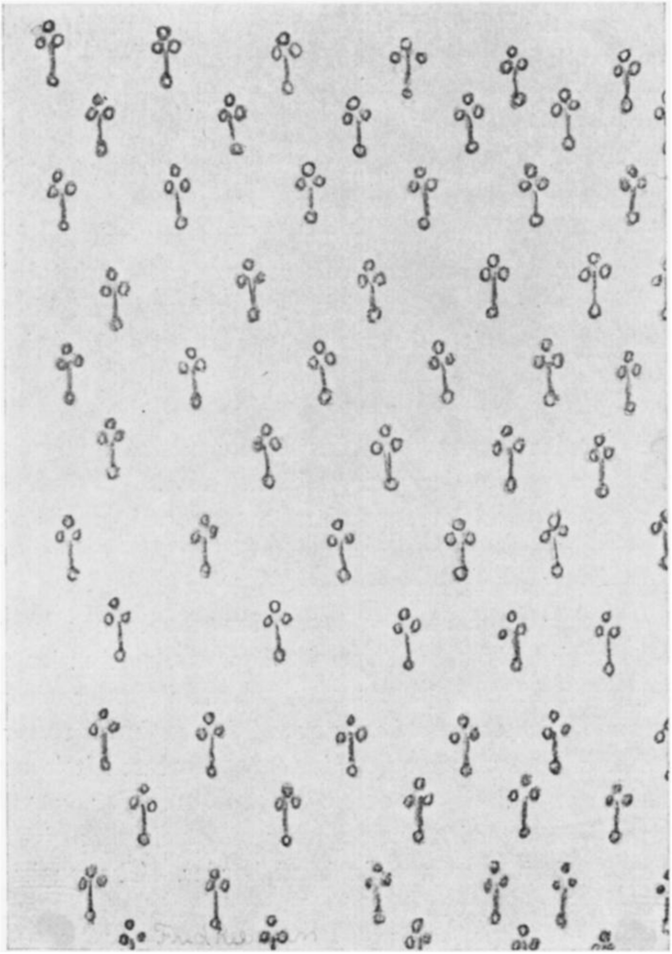

FIG. 5

arrangement of what is given. This tends to develop appreciation of consistently related spaces which is a fundamental element in good design. It is necessary for children to learn that the most important question in design is not how much can be included in the space, but what is the best disposition of appropriate material. This can be emphasized at first by furnishing the elements and leaving to the children only the problem of their disposition, which at this age is fully sufficient.

When the given elements are simple, children in the fifth grade usually choose the best spacing, if they experiment with, and discuss, different possible arrangements. For example, when the problem is to design the spacing for two stripes across a rug which is to be woven, if the children cut patterns of the rug and place two splints or pencils across to represent the stripes and move these back and forth to see the effect of different spacings, they will generally select as the final choice an arrangement similar to Fig. 6, which is pleasing.

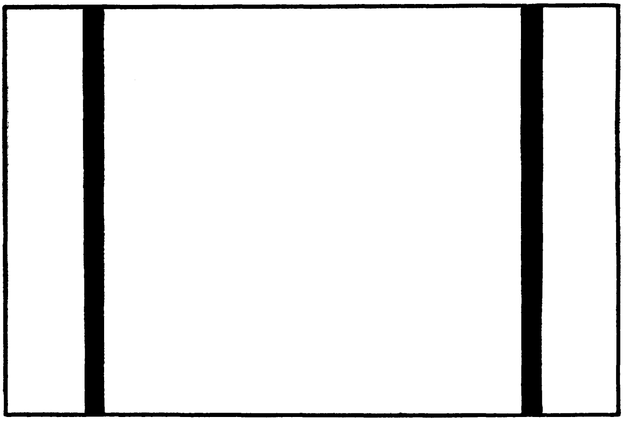

Fig. 6

The ability, which is apparent at about this age, to appreciate good spacing, should be developed from year to year till it becomes unerring in its judgment. Thoughtful experimentation is the most effective method of developing this ability.

In the fourth year and during each succeeding year children should have general practice in the use of water color in connection with nature and object drawing. Special emphasis may be placed upon the study of color hues or the steps by which one color merges into another. If samples of two colors adjacent in the spectrum, for example, green and yellow, are placed at a little distance apart the children can collect and arrange samples so as to form well-graded steps from green to yellow. Later they may represent these steps with water color. The children should also learn to make even, flat washes of color over given areas.

A reasonable standard of accomplishment has been reached at the end of the fifth year in school if to the increased facility in graphic expression which comes from continued general practice has been added definite training in quick perception of relative proportions of shapes and slants of lines, so that the mind is able to retain and compare the image of the object with that of the representation and discern their correspondences and differences. This is likewise true if children can bring to their constructive expression such acquaintance with new tools as gives them new mastery of material, and such knowledge of patterns as enables them to think out processes and forecast results more intelligently, and such constructive interests as lead them to find satisfaction in originating projects and carrying them to a worthy completion. And it is true, too, if they find increased pleasure in well-related spaces, in the best solution of simple problems in design, and in the greater familiarity with color that comes from continued study aided by the addition of a new medium of expression in the form of water colors.